

Application Serial No. 10/643,376
Preliminary Amendment dated June 24, 2005
Reply to Office Action dated March 24, 2005

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1-32. (canceled)

33. (currently amended) A thermostat system comprising:
a processor having a user interface; and
a program, in the processor, having an at least one configuration for an air management system, the at least one configuration comprising:

an air management system identification;
a listing of zones for the air management system;
parameter settings for each zone;
schedules of the parameter settings;
a modulated control for a plurality of heating stages for at least one zone;

[[and]]

a modulated control for a plurality of cooling stages for at least one zone;

and

a modulated control for a simultaneous operation of a heating device and a cooling device.

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34. (previously presented) The system of claim 33, further comprising:
a plurality of programmable thermostats; and
wherein the processor may download the program having at least one configuration to each thermostat of the plurality of thermostats.

35. (cancelled)

36. (currently amended) The system of claim [[35]]33, wherein the simultaneous heating device and the cooling device is for affecting humidity.

37. (previously presented) The system of claim 36, wherein the at least one configuration comprises a modulated control for an air mover.

38. (previously presented) The system of claim 37, wherein the modulated controls comprise PID (proportional, integral and derivative) control loop tuning.

39. (previously presented) The system of claim 38, wherein the parameters are selected from a group consisting of temperatures, humidity, sensor selection, volume of air movement, the percentage of added fresh air, modes of occupied, unoccupied or standby of certain spaces for at least one zone.

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40. (previously presented) The system of claim 38, wherein the at least one configuration further comprises a selectable non-modulated control for the pluralities of the heating and cooling stages and for the air mover.

41. (previously presented) The system of claim 40, wherein the processor is a portable configuring device.

42. (previously presented) The system of claim 41, wherein the processor has a capability comprising:

uploading a configuration from a thermostat of the plurality of thermostats;
modifying the configuration; and
downloading the configuration to the thermostat.

43. (previously presented) The system of claim 42, wherein the processor may download the configuration to several thermostats of the plurality of thermostats.

44. (previously presented) The system of claim 41, wherein:
the processor may upload a configuration from a thermostat of the plurality of thermostats;
the configuration may be diagnosed for possible problems;
the configuration may be modified to remove the possible problems; and
the configuration may be downloaded to the thermostat of the plurality of thermostats.

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45. (previously presented) The system of claim 41, wherein the processor is a personal digital assistant.

46. (currently amended) The system of claim 45, wherein the personal digital assistant is selected from group of devices consisting of a PalmTM and the like.

47. (withdrawn) A thermostat system comprising:

a configuring device; and

a plurality of thermostats for air management systems, respectively; and

wherein:

the configuring device may upload, store, modify and download one or more configurations of the plurality of thermostats;

each configuration may be modified by changing:

parameter settings;

schedules of parameter settings; and

modulated controls for heating stages and cooling stages.

48. (withdrawn) The system of claim 47, wherein each air management system may have a plurality of zones.

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49. (withdrawn) The system of claim 48, wherein the configuring device has various configurations that may be downloaded to the thermostats of the air management systems at different locations.

50. (withdrawn) The system of claim 49, wherein the configuring device is a commercially available computer.

51. (withdrawn) The system of claim 50, wherein the configuring device is a person digital assistant.

52. (withdrawn) The system of claim 51, the personal digital assistant is selected from group of devices consisting of a PalmTM and the like.

53. (previously presented) A thermostat system comprising:
a plurality of thermostats; and
wherein each thermostat of the plurality of thermostats comprises at least one configuration for an air management system, the at least one configuration comprising:
an air management system identification;
a listing of zones for the air management system;
parameter settings for each zone;
schedules of the parameter settings;
modulated controls for a plurality of heating stages for at least one zone;
and

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modulated controls for a plurality of cooling stages for at least one zone.

54. (previously presented) The system of claim 53, wherein the plurality of thermostats is connected to a communications bus.

55. (previously presented) The system of claim 54, further comprising a sequencing system controller connected to the communications bus, for controlling and staging the plurality of thermostats.

56. (previously presented) The system of claim 55, wherein the at least one configuration further comprises a modulated control for a simultaneous operation of a heating device and a cooling device.

57. (previously presented) The system of claim 56, wherein the simultaneous heating device and the cooling device is for affecting humidity.

58. (previously presented) The system of claim 57, wherein the at least one configuration comprises a modulated control for an air mover.

59. (previously presented) The system of claim 58, wherein the modulated controls comprise PID (proportional, integral and derivative) control loop tuning.

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60. (previously presented) The system of claim 58, wherein the parameters are selected from a group consisting of temperatures, humidity, sensor selection, volume of air movement, the percentage of added fresh air, modes of occupied, unoccupied or standby of certain spaces for at least one zone.

61. (previously presented) The system of claim 58, wherein the at least one configuration further comprises a selectable non-modulated control for the pluralities of the heating and cooling stages and for the air mover.

62. (previously presented) The system of claim 61, further comprising:

a configuring device; and

wherein:

the configuring device may communicate with system sequencing controller; and

the configuring device may upload, store, modify and download one or more configurations of the system sequencing controller and at least one configuration of the plurality of thermostats.

63. (previously presented) The system of claim 61, wherein the configuring device is a personal digital assistant.

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64. (New) A thermostat system for controlling at least part of an HVAC system, wherein the HVAC system includes three or more heating and/or cooling stages, the thermostat comprising:

a first modulated output coupled to a first stage of the three or more stages and providing a first modulated variable output for controlling the first stage;

a second modulated output coupled to a second stage of the three or more stages and providing a second modulated variable output for controlling the second stage at the same time as the first modulated output provides the first modulated variable output for controlling the first stage; and

a discrete on/off output coupled to a third stage of the three or more stages for providing a discrete on/off output for controlling the third stage.

65. (New) The thermostat of claim 64 wherein the first stage is a heating stage.

66. (New) The thermostat of claim 65 wherein the second stage is a heating stage.

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67. (New) The thermostat of claim 66 wherein the third stage is a cooling stage.
68. (New) The thermostat of claim 64 wherein the first stage includes a first boiler stage.
69. (New) The thermostat of claim 68 wherein the second stage includes a second boiler stage.
70. (New) A thermostat system for controlling at least part of an HVAC system, wherein the HVAC system includes two or more heating stages and one or more cooling stages, the thermostat comprising:
 - a first modulated output coupled to a first heating stage and providing a first modulated variable output for controlling the heat output of the first heating stage;
 - a second modulated output coupled to a second heating stage and providing a second modulated variable output for controlling the heat output of the second heating stage at the same time as the first modulated output provides the first modulated variable output for controlling the heat output of the first heating stage; and
 - a discrete on/off output coupled to a cooling stage for providing a discrete on/off output for controlling the cooling stage.